GRASSHOPPERS AT SEA.

By WILLIS EDWIN HURD.

[Dated: Weather Bureau, Washington, Feb. 3, 1917.]

On October 7, 1916, the Norwegian bark *Robert Scrafton*, Capt. B. Morthensen, bound toward Pensacola from Liverpool, encountered a swarm of grasshoppers in latitude 20° 57′ N., longitude 39° 28′ W., therefore about 1,200 nautical miles from the African coast. In the daily journal attached to this vessel's marine weather report of October 7, 1916, appears the following entry:

[Wind], steady east and ENE., force 3–4. Clear blue sky. A lot of grasshoppers of a yellowish color, with brown spots on their wings, some 4 inches long, came aboard. Wonder where they have come from? They fly around very lively.

On his arrival at Pensacola Capt. Morthensen handed a bottled specimen of the grasshoppers to William F. Reed, jr., Local Forecaster in charge of the Weather Bureau office there, whence it was mailed to the central office at Washington, and from there forwarded to Dr. L. O. Howard, Chief of the Bureau of Entomology, for identification and comment. The accompanying is an excerpt from Dr. Howard's reply:

This is one of the large migratory grasshoppers of the genus Schistocerca. Mr. A. N. Caudell, of this bureau, who is an expert on this group of insects, says that it is *Schistocerca tartarica*, a species which occurs in southern Europe, Africa, Ceylon, and also in Central America and northern South America. It is a tremendous flier, and has been taken far at sea on previous occasions. The observation, then, is not novel, but it is rare enough to be well worth recording.

From the meager reports at hand concerning the weather conditions prevailing over the area of probable migration, during early October, it is gathered that an area of high pressure overspread the region during the entire period, and that the Northeast Trades were blowing with little interruption from the African coast to the longitude where the insects were observed. In fact, so long-sustained a flight would doubtless never have been accomplished had it not been for the favoring trades.

An incident of this nature makes intensely interesting the fact that the bodies of insects which are capable of extended migrations are furnished with large air sacs in addition to the breathing tubes common to all insects. These air sacs so buoy the winged creature that it is enabled to sustain itself in the air for hours or even days at a time, using as little effort in the act as it would expend on land in a few short hops. Its speed during flight varies from 3 to 20 miles an hour.

The African grasshopper in particular has long been storied on account of its great flights at sea. It has crossed the Red and Mediterranean seas in large and destructive swarms, and occasionally flies to the Canary Islands and other regions to the westward of the coast, its masses alighting on the water if rest is required. A case that parallels the one in hand is found in Badenoch's "True Tales of the Insects":

On November 2, 1865, a ship on the voyage from Bordeaux to Boston, when 1,200 miles from the nearest land, was boarded by a swarm, the air being filled and the sails of the ship covered with them for two days.

NATIONAL METEOROLOGICAL SERVICE OF COLOMBIA.

The United States chargé d'affaires ad interim at Bogotá, Perry Belden, Esq., transmitted to the State Department on December 30, 1916, clippings from the Diario Oficial which give the text of Law 74 of December 16, 1916, establishing a national meteorological service for Colombia.[1] As article 1 of this new law states, Colombia, for her part, thus puts into effect the resolution embodied in article 6 of the final act of the Second Pan-American Scientific Congress.[2] An abstract of the law follows.—C. A. jr.

Article 1 directs the Government to organize the national meteorological service in a manner conforming to the needs of the country and to the practices followed by other American Republics.

Article 2 authorizes the Government to decide on means for securing the effective cooperation of meteorological stations already existing or to be established at missions, schools of agriculture, and other institutions adapted to the work.

Article 3 directs that the general program of observations at present followed by the National Astronomical Observatory in studying the climate of Bogotá, shall be the pattern for the national survey after such modifications as may be needed to meet the requirements of agricultural and hydrographic (river) statistics for the whole country, always striving to adopt a plan homogeneous for Spanish-American countries.

Article 4 creates a central meteorological office in charge of a chief who shall be the Director of the Astronomical Observatory. He will be assisted by an adjunct engineer (un ingeniero adjunto) and a clerk, receiving monthly salaries of 80 pesos and 40 pesos, respectively.

The Central Meteorological Office will compile the data gathered throughout the country and will plot it at least twice a month on suitable maps and diagrams in accordance with the provisions of the latest meteorological conventions.

Article 5 authorizes the publication of the maps, diagrams, etc., together with the observations at Bogotá relating to solar activity and electric potential, and such other scientific contributions as the Chief of the Central Office may deem worthy of publicity. This publication will be in the Revista del Ministerio de Agricultura y Comercio, which will be distributed gratuitously to domestic cities, centers of secondary and professional instruction, agricultural stations, navigation companies, and canal boards and agricultural insurance companies; abroad the Revista will be sent to meteorological and astronomical observatories.

Article 6 directs the Government to supply necessary instruments to the National Astronomical Observatory and such other institutions and organizations as the Government calls on for meteorological and fluviometric observations. It appropriates 8,000 pesos (gold) for this purpose and adds this sum to the current and subsequent budgets.

[1] *See* "Diario Oficial," Bogotá, sábado 23 de diciembre, 1916. Año LII, No. 15977, p. 1722.

[2] *See* MONTHLY WEATHER REVIEW, Dec. 1915, 43:606, for a copy of the resolution.

Article 7 authorizes such city public schools and other offices as the Government shall designate, to take meteorological observations which are to be reported every 10 days to the National Astronomical Observatory, and directs that the Government provide the necessary recording instruments.

This article also extends the franking privilege, both postal and telegraphic, to those engaged in this work.

Article 8 authorizes the Government to designate as many as 20 persons or bodies in different sections of the country to make meteorological observations and allows such observers annual pay to the amount of 120 pesos (gold) each.

The Director of the National Astronomical Observatory is also authorized to establish not to exceed four (4) special meteorological stations whose programs shall be of the same order as that of the central office, to be located at selected points, and the official in charge of such a station to receive annual pay of 600 pesos (gold). For the expenses of these special stations 4,800 pesos (gold), or so much thereof as may be needed, is appropriated.

Article 9 provides that the central office shall distribute all the instruments employed, and that they shall be strictly uniform in pattern, the fluviometers to be uniform with those employed by the navigation companies.

Article 10 extends franking privileges to the employees of the service, the Director of the National Astronomical Observatory, and to persons or bodies designated to make meteorological observations.

Article 11 provides that appointments to the meteorological service will be made by the Government, with the concurrence of the Director of the National Astronomical Observatory.

ANOTHER "DARK DAY OF MAY 19, 1780"?

The editor has recently received the letter printed below, but is unable to find any reports indicating that the darkness of May 19, 1780, which visited New England (Cambridge, Mass.) between 10 and 11 a. m. on that date and continued into the night, was observed outside that province.[1] Accounts prepared at the time indicated that the darkness was due to forest fires—ashes and cinders to a depth of 6 inches fell in parts of New Hampshire—and that it did not extend in any direction far beyond the boundaries of New England. This view is also adopted by F. G. Plummer in his study of forest fires, where he gives a map of the extent of historic "dark days" in the northeastern United States and lists them.[2]

We publish Mr. Maxwell Hall's letter in the hope that some reader may be able to increase our knowledge of the extent of the darkness of May 19, 1780, and help to determine whether or no there was an independent area of darkness over the West Indies region.

MONTEGO BAY, JAMAICA, W. I.,
January 19, 1917.

DEAR SIR: There have been some letters in the local press here about the dark day, May 19, 1780, recorded in the Connecticut Historical Collections; and one of the writers referred the matter to Prof. H. F. Newall, of Cambridge, England.

Prof. Newall's letter in reply has been published, and it is to the effect that "there is no evidence that on 19 May, 1780, there was any change in the sun's light. The evidence quoted only shows that there were local conditions of unusual nature in Connecticut, such as might be produced by smoke from forest fires at a distance, with easily imagined conditions of wind."

And so indeed I had always supposed myself; but on February 12, 1915, there died in Montego Bay an old Negro woman at the great age of 142 years; and the local newspaper reported that she was a child at the time of "the dark day," May 19, 1780, but had a distinct recollection of it. I then made further inquiry but got no further information, nor was it likely that I should, beyond the fact that the circumstance referred to Jamaica.

Prof. Humphreys made a study of the darkening of sunlight through volcanic eruptions (Bull. Mount Weather Obs'y, v. 6, p. 26), but his list makes no reference to the year 1780.

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Yours, truly,

MAXWELL HALL,
Government Meteorologist.

Is it not more probable that, even accepting the stated age of the old negress as reliable, she remembered some "dark day" due to some local forest fire in Jamaica?

The character of the year 1780, aside from the forest fires of North America, was probably very dry and very warm. In fact, as far as Humphreys' compilation goes, the general average temperatures were higher than they have been since. This *may* be interpreted as showing a general clearness of the atmosphere during 1780, which would be rather inconsistent with the presence of a general dust veil or extensive smoke cloud.—C. A. jr.

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[1] *Williams, Samuel.* An account of a very uncommon darkness in the States of New England, May 19, 1780. Memoirs, Amer. acad. arts and sci., Boston, 1785, I: 234–246. *Perley, Sidney.* Historic storms of New England, etc. Salem, Mass., 1891. 8°. *See* Chapter 23, pp. 105–114.

[2] *Plummer, Fred G.* Forest fires, their causes, extent, and effects, with a summary etc. Washington, 1912. 8°. (U. S. Forest Service Bulletin 117). Cf. pp. 18 and 19.